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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/581,397	10/02/2000	Lars Eric Sundstrom	MAR37P-314	9763

7590 04/29/2002

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EXAMINER

LUKTON, DAVID

ART UNIT	PAPER NUMBER
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1653

DATE MAILED: 04/29/2002

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/581,397

Applicant(s)
Sundstrom

Examiner
David Lukton

Art Unit
1653



— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jan 23, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above, claim(s) 3, 4, 7, and 9-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 6, 8, and 19-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

Pursuant to the directives of paper No. 12 (filed 1/23/02), claims 1, 2, 5 and 6 have been amended, and claims 19-24 added.

Claims 3, 4, 7, 9-18 remain withdrawn from consideration, pursuant to the restriction.

Claims 1, 2, 5, 6, 8, 19-24 are examined in this Office action.

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Claims 1, 2, 5, 6, 8, 19-24 are rejected under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- In each of the independent claims, variable R¹ is defined. It is recited that R¹ can be an alkyl or aryl group that is substituted with a substituent "a". In the claims as originally filed, the symbol "α" was used. The letter "a" should be avoided as a substituent variable. It is suggested that the symbol "α" be used, or that another substituent variable such as "R⁵", be used.
- In claim 1, the last line makes reference to "salts" in the plural. Here, "salts" should instead be in the singular, since the claim is drawn to just one compound (at a time), or a salt thereof.
- Claim 1 recites that either of "X" and "Y" can be "a simple heteroatom-containing group". However, this term remains indefinite in its present form. The following is suggested for the passage at issue in claim 1:

...X and Y are each independently selected from the group consisting of hydrogen, lower alkyl, amidino, alkoxycarbonyl, carbamoyl, and a heterocyclic group; or X and Y, taken together with the nitrogen atom to which they are bonded, form a nitrogen-containing heterocyclic group...

- The rationale for the dependence of claim 8 on claim 1 remains very unclear. Claim

1 does not permit "Q" to be a guanidino group, which is what is present in claim 8. Claim 1 does permit "Q" to be a group of the formula X(Y)N-, but there is no indication that either "X" or "Y" can be an amidino group. It remains the case claim 1 is sufficiently indefinite so as to justify the assertion that the dependence of claim 8 on claim 1 is improper. Applicants have argued in effect that if one picks apart the disclosure to a sufficient degree, one can eventually figure out what the various terms mean in the claims, and that having done this, one can come up with a rationale for the dependence of claim 8 on claim 1. However, it remains the case that there is not a sufficiently clear "roadmap" to get from the definition of "Q" in claim 1, to the guanidino group of claim 8. It remains the case that the claims, and the terms at issue are indefinite. The claims should stand on their own, without one having to dig through the specification at great length to figure out what is intended. The following is suggested for the passage at issue in claim 1:

...X and Y are each independently selected from the group consisting of hydrogen, lower alkyl, amidino, alkoxycarbonyl, carbamoyl, and a heterocyclic group; or X and Y, taken together with the nitrogen atom to which they are bonded, form a nitrogen-containing heterocyclic group...

The following claim can be added, if deemed appropriate:

25. The compound according to claim 1, wherein X is amidino and Y is hydrogen.

※

The following is a quotation of the appropriate paragraphs of 35 U.S.C §102 that form the basis for the rejections under this section made in this action.

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 6, 8, 19, 21-23 are rejected under 35 U.S.C. §102(b) as being anticipated by

Cherskey (WO 93/12777).

Cherskey teaches (p. 14, line 16+) a compound designated "R". This is identical to the compound in claim 8 (the elected specie).

In response to this rejection, applicants have argued that by undertaking the synthetic methods described in the reference, numerous side reactions would have occurred, and that the compounds produced thereby could not have been pure. However, applicants have not said what their reaction conditions were. In addition, the Cherskey does make reference to a purification procedure. There is also another point to be made. Suppose

that a person creates the structure of a molecule out of "thin air"; call it compound "X". If that person then files a PCT application without ever having synthesized the compound, or tested it in any way, that PCT application becomes a public disclosure once published.

Once that disclosure is within the public domain, that disclosure of compound "X" preempts anyone else from claiming it. Whether the person responsible for the disclosure merely "stumbled onto the truth" fortuitously, or arrived at it through years of careful and tedious work, makes little difference with respect to the validity of that disclosure as "prior art".

Thus, if disclosure of a compound "X" can preempt anyone else from claiming compound "X" in a case where the compound "X" is nothing more than the product of one's overactive "chemical imagination", it stands to reason that if an applicant makes an attempt to prepare compound "X" in a laboratory, and falls short of an optimal synthesis method, then a

disclosure of compound "X" in that situation should also be adequate. Notwithstanding the foregoing, it may be the case that a particular method of preparing or using the compound "X" is novel. Such may be the case here as well.

However, given that the claims are drawn only to compounds and compositions, and to a method of making or using them, the rejection is maintained.

※

Claims 1, 2, 5, 6, 8, 19, 21-23 are rejected under 35 U.S.C. §102(b) as being anticipated by Cherskey (USP 5,242,947).

As indicated previously, Cherskey teaches (cols 7-8, approximately line 50) compound "B". The reference also teaches (col 14, line 62) pharmaceutical compositions.

The arguments presented above apply here as well (the §102 over WO 93/12777).

Applicants have supplied a declaration in which it is asserted in effect that they have discovered conditions under which formation of arginine-spermidine and lysine-spermidine does not occur. Declarant has not stated, however, what the conditions were, what the reagents were, what the solvents were, what the reaction times were, what the temperatures were, or any other specifics. Accordingly, the declaration is not particularly meaningful in its present form. In the event that applicants wish to argue that they have discovered conditions under which formation of arginine-spermidine and lysine-spermidine does not occur, it is suggested that applicants be very specific and detailed about what those

conditions are. No further comment by the examiner about the declaration is necessary.

There is another point to be made, which is that the presumption of validity is conferred upon US Patent 5,424,947, as with all other patents. Applicants have properly avoided any use of the word "invalid" in reference to US Patent 5,424,947; however, applicants seem to be implying that Cherskey could not have obtained the compounds which he asserts that he obtained, and if that is true, then it would follow that he could not have obtained any of the biological assay results which he asserts that he obtained. Taking the arguments to their logical conclusion, it would appear that applicants are questioning the validity of the patent. However, the PTO is not the proper forum for such a debate. The issue here may be more one of legality than of chemistry. Even if applicants allegations are 100% correct, that is really immaterial insofar as the patent examining process is concerned. It is improper for an examiner to question the validity of a patent, and moreover, it is improper for two examiners to issue two patents for the same invention (at least when the respective inventive entities are completely unrelated). It is not within the purview of this examiner, at least, to usurp the monopoly that has already been granted for the compounds at issue.

Thus, for each of several reasons, the rejection is maintained.

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Claims 1, 2, 5, 6, 8, 19, 21-23 are rejected under 35 U.S.C. §102(b) as being anticipated by Cherskey (USP 5,424,202).

Cherskey teaches (cols 11-12), generic formula I. This overlaps that of claim 1.

Thus, the claim is anticipated. The arguments presented above Cherskey ('947) apply here as well.

*

The following is a quotation of 35 USC §103 which forms the basis for all obviousness rejections set forth in the Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

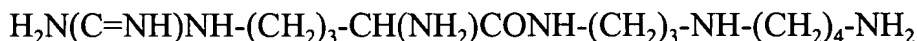
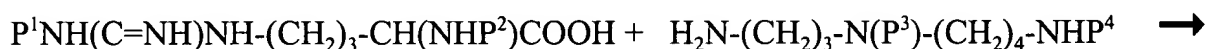
Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made, absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103.

Claims 1, 2, 5, 6, 8, 19-24 are rejected under 35 U.S.C. §103 as being unpatentable over Cherskey (WO 93/12777) or Cherskey (USP 5,242,947) or Cherskey (USP 5,424,202).

The teachings of the references were indicated previously. This ground of rejection is predicated on the stipulation that Cherskey failed to optimize reaction conditions. For example, Cherskey provides little in the way of discussion of protecting groups. An

organic chemist of ordinary skill would recognize that an optimal yield would be obtained if there were just one electrophile (the carboxyl group or active ester thereof) and one nucleophile (the amine reactant). One option for a synthetic scheme is as follows (wherein P1 represents a guanidino protecting group, and P2, P3 and P4 represent amino protecting groups):



Certainly, protecting groups for arginine were well known by the 1960's. Moreover, it is not apparent that there would be any need for orthogonal protecting groups to protect the three non-participating amino groups. Once in possession of di-protected spermidine (e.g., with Fmoc groups), the coupling reaction is very straightforward. There are, of course other synthetic possibilities. The point is that, once presented with the structure of the "target" compound, the organic chemist of ordinary skill could obtain the compound within the bounds of routine experimentation.

Thus, the claims are rendered obvious.

*

Claims 1-24 are rejected under 35 U.S.C. §103 as being unpatentable over Cherskey (WO

93/12777) or Cherskey (USP 5,242,947) or Cherskey (USP 5,424,202).

This ground of rejection is predicated on the stipulation that Cherskey failed to optimize reaction conditions, but that the chemist of ordinary skill is nonetheless deterred by this, and would purify the compounds that are prepared by the methods disclosed in the reference.

This ground of rejection further assumes that the compounds were in fact obtained, even if the disclosure of experimental details was somewhat less than thorough. Whether the yield of the target compounds in the reaction was 90%, or whether a complex mixture was obtained in which 80% of the compounds are undesired impurities, the assertion is that it is within the capability of the ordinarily skilled organic chemist to purify the compounds by chromatographic methods, particularly HPLC. HPLC is in fact mentioned in Cherskey. Preparatory HPLC is a powerful tool, and is effective for resolving two or more compounds which have nearly the same polarity.

Thus, acquisition of the compounds would have been obvious to one of ordinary skill.

✱

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lukton. Phone: (703) 308-3213.

An inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.



DAVID LUKTON
PATENT EXAMINER
GROUP 1800